R E P O R T R E S U M E S

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INSTRUCTIONAL TECHNOLOGY AND MEDIA PROJECT, THIRD ADVISORY PANEL MEETING JANUARY 7, 8, AND 9, 1965 LOS ANGELES, CALIFORNIA, SUPPORTING PAPERS.

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REPORT NUMBER NDEA-VIIB-390-3 PUB DATE 65
EDRS PRICE MF-$0.18 HC-$2.64 66P.

DESCRIPTORS- *INSTRUCTIONAL TECHNOLOGY, *ADVISORY COMMITTEES, *PUBLICATIONS, FILMS, *INSTRUCTIONAL FILMS, *INFORMATION SYSTEMS, INFORMATION DISSEMINATION, RESEARCH PROJECTS, INSTRUCTIONAL TECHNOLOGY AND MEDIA PROJECT, LOS ANGELES, CALIFORNIA

THE INSTRUCTIONAL TECHNOLOGY AND MEDIA PROJECT (ITM) HELD A THIRD ADVISORY PANEL MEETING IN LOS ANGELES ON JANUARY 7, 8, AND 9, 1965. RELATIVE TO THE MEETING, THIS REPORT INCLUDES THE FOLLOWING DOCUMENTS AMONG OTHERS--(1) AN OUTLINE ON TECHNIQUES OF MULTI-STREEN-MULTI-MEDIA PRESENTATION, (2) FILM TREATMENTS WITH FORWARDING LETTERS TO THE U.S. OFFICE OF EDUCATION, (3) BRIEF STATUS REPORT ON ITM'S FILM PROJECT, (4) STATUS REPORT OF FILMS TO BE PRODUCED BY THE CINEMA DEPARTMENT, UNIVERSITY OF SOUTHERN CALIFORNIA, (5) AN ANALYSIS OF THE PUBLICATIONS PROGRAM OF THE EDUCATIONAL MEDIA BRANCH, (6) A PROPOSAL FOR A MONOGRAPH, "DESIGN IN MATERIALS OF INSTRUCTION", (7) A PROPOSAL FOR A MONOGRAPH, NEW MEDIA AND INSERVICE EDUCATION, (8) A PROPOSAL FOR A MONOGRAPH, "AN ANALYSIS OF THE INTERNATIONAL EDUCATIONAL MEDIA PROBLEM," AND (9) THE PRESENT STATUS OF ITM'S INFORMATION STORAGE AND RETRIEVAL SYSTEM. (JC)

ED003811

B-390
No 3

ITM

INSTRUCTIONAL TECHNOLOGY AND MEDIA PROJECT

THIRD ADVISORY PANEL MEETING

January 7, 8, and 9, 1965

Los Angeles, California

SUPPORTING PAPERS

School of Education
University of
Southern California
Los Angeles,
California 90007

A PROJECT FUNDED UNDER A CONTRACT WITH THE
UNITED STATES OFFICE OF EDUCATION

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OUTLINE

OCCASIONAL PAPER

ON

TECHNIQUES OF MULTI-SCREEN - MULTI-MEDIA PRESENTATIONS

Chapter I

Introducing Multi-Screen - Multi-Media

1. Introduction

    a. Relation to dissemination efforts of TDP and ITM
    b. Experiences
        (1) General presentations
        (2) Kansas City
        (3) U.S. Office Demonstration Center
        (4) Detroit
        (5) Kalamazoo
    c. Relations with class at USC

2. Definition

    a. "Cross Media Approach"
    b. Multi-Media
    c. Multi-Screen - Multi-Media

3. Brief Comment on Educational Uses

    a. Large group instruction
    b. Introductions, Summaries, Basic Presentations
    c. Attitudinal factors
    d. A note on Travers' criticism

4. Literature

    a. U.S. Army study
    b. Eastman Kodak
    c. Audio-Visual Instruction

Chapter II

From the Simple to the Complex

1. Introduction - Common types of Multi-Media - Multi-Screen presentations

2. Dual Combinations

    a. Overhead plus Slides or Filmstrips

b. Overhead plus Film
c. Overhead plus Tape
d. Slides or Filmstrips plus Tape
e. Slides or Filmstrips plus Film
f. Other dual combinations

3. Multiple Combinations

   a. Possible combinations using overhead, slides, filmstrips, films, audio records, audio tapes, and television

4. Peripheral Items

   a. Lighting
   b. Sound
   c. General environment

5. Ideal Specifications

Chapter III

An Analysis of the Elements of Design

1. Subject matter

   a. Visual aspects
   b. Audio aspects

2. Material

   a. Visual
      (1) One-dimensional (pictures, charts, maps, etc.)
      (2) Three-dimensional (models, mockups, etc.)
      (3) Projected (pictures, charts, etc.)
         (a) Still
         (b) Motion
      (4) Black-and-white
      (5) Color
   b. Audio
      (1) Live
         (a) Voice
         (b) Public Address
      (2) Recorded
         (a) Magnetic tape
            1. Single channel
            2. Multiple channel
         (b) Records

3. Equipment

   a. Visual
      (1) Projectors
      (2) Television
      (3) Screens

(4) Pointers
(5) Spotlights

b. Audio
(1) Tape recorders and players
(2) Record players
(3) Public address system

4. Conception and Design

a. Identification of subject areas and entering behavior of audience
b. Careful statement of objectives
c. Determination of the specific media best suited (within financial and other practical considerations) to achieve the objectives
d. Surveying of existing materials that relate to each subject area
e. Determination of which new materials will be needed for each subject area
f. Media utilization
(1) Don't attempt to use all media simultaneously without careful deliberation. Confusion, rather than clarity, can result from indiscriminate, shotgun approaches.
(2) As a rule of thumb, use one visual medium at a time, or one <u>main</u> visual medium and one supporting visual medium.
(3) Usually more than one audio medium may, when required, be used at a time (e.g., tape recorder and live lecturer).
(4) Mixing of visual and audio stimuli is usually quite effective and mutually reinforcing.
g. Material utilization
(1) Begin with the material that is the <u>least</u> flexible and supplement with the materials that are increasingly flexible (e.g., select music first, add verbal commentary to length of music and visual stimuli to fit the commentary. In certain instances the order of the verbal commentary and visual stimuli might be reversed.).
(2) Avoid mixing black-and-white and color visual materials (e.g., black-and-white and color slides) unless there is a valid aesthetic or didactic reason.
(3) When three screens are used, and the subject matter calls for rapid change of picture, it is inadvisable in most instances to change all three screens simultaneously. The result will generally be "visual cacophony." Use the center screen for "frame of reference" type material. As a variation, the center screen may be used for fixed material with the outer screens alternating or simultaneously flashing rapid picture changes.

(4) When using slide projectors and three screens, it is generally more effective if all slides are horizontal rather than vertical. Also, a mixture of the two is to be avoided if at all possible; the uneven pattern is distracting to the eye.

Chapter IV

Scripting

1. Reasons for writing a script

2. Analysis of elements and their relation to design

   a. Educational (human) elements
      (1) Subject matter and research
      (2) Audience
      (3) Objectives
   b. Technical Elements
      (1) Time
      (2) Situation
      (3) Facilities
      (4) Equipment
   c. Concept of trade-off

3. Ways of writing

   a. Writing on the equipment
      (1) Writing from viewing device
   b. Story boarding
      (1) Story boarding on viewing device
   c. Writing from narration or subject matter outline

4. Formats for scripts - examples

   a. Kansas City
   b. U.S. Office of Education

Chapter V

Materials Indexing and Management

1. Need for developing a system

2. Storage of multi-media materials

   a. Intact presentations
   b. Separate storage of materials

3. Budget considerations

4. Duplication of materials

5. Indexing of materials

6. Consideration of storage and retrieval systems in current use

   a. Aperture cards
   b. Edge-notched cards
   c. Peek-a-Boo cards

7. Suggested cataloging and handling procedures

8. Storage and display of 35mm slides

   a. Use of plastic trays
   b. Use of "E-Lites" (giant slide sorter)

9. Suggested retrieval systems for slides

10. Preparing the slide presentation

Chapter VI

Control and Programing Hardware

1. Introduction

   a. Two basic functions
   b. Hardware parameters
      (1) Common media
      (2) Multiple mode
      (3) Means of activating equipment
   c. Equipment for hardware design
   d. Spectrum of power distribution
      (1) Manually operated, remotely controlled
      (2) Semi-automatically operated, remotely controlled
      (3) Automatically controlled

2. Manually operated, remotely controlled

   a. Power distribution module
      (1) Wiring diagram
   b. Manual control console
      (1) Wiring diagram
   c. Reasons for the Black Box
      (1) Full control and maximum flexibility
      (2) Concentration at controls
   d. Advantage of the system

3. Semi-automatically operated, remotely controlled

   a. Single mode
      (1) Wiring diagram

b. Multi-mode
   (1) Wiring diagram
c. Programing
   (1) Parallel system
      (a) Harness-wiring diagram
   (2) Series system
d. Wiring the programing into the hardware
   (1) Single mode
   (2) Multi-mode

4. Automatically controlled

a. Functions performed by the instructor
   (1) Memory
   (2) Force
b. Control console
   (1) Wiring diagram
c. Programing
   (1) Paper tape
   (2) Magnetic tape

5. Screen assignment

6. Further developments in manually operated, automatic control mechanisms

a. From battery of projectionists to Black Box
   (1) Problems of synchronization
   (2) Complexity of multi-media and multiple screen
b. Control equipment for complex presentations
   (1) Direct switching
   (2) Relay switching
   (3) Remote control box for relay switching
   (4) Alternate systems for team and individual control
c. Special sound requirements
   (1) Problems of matching, mixing, and control
   (2) Alternate systems for use by projectionist and speaker
d. Appendix
   (1) Modification of some conventional motion picture projectors for remote control

Chapter VII

Using the EDEX Console to Automatically Operate a Multi-Media - Multi-Screen Presentation

(to be supplied by Bob Love)

Chapter VIII

The Eastman Kodak System

(to be supplied by Adrian Terlouw)

Chapter X

Presentation and the Presentation Environment

1. The ideal situation - specifications
2. Problem of meeting rooms
3. A checklist for rooms
4. Procedures designed to defect Murphy's Law
5. Emergency procedures

December 9, 1964

Dr. Hugh F. McKeegan
Research Coordinator
Media Research and Dissemination Branch
U. S. Office of Education
Washington 25, D.C.

Dear Hugh:

Herewith are the treatments of the films which were supplied to your office August 10. I think you understand the problem, and we would appreciate a reaction as soon as possible.

Since you have come on board, I would like to invite you to the Third Meeting of our Advisory Panel. It will be held Thursday, Friday and Saturday, January 7-9, at the Sheraton Marina Hotel in Los Angeles. We are planning to open the conference with a dinner meeting at 6:00 p.m. Thursday and end with the final meeting over at noon Saturday.

I very much hope you will be able to attend.

Cordially,

James D. Finn
Project Director

Enclosures

JDF:paz

August 10, 1964

Mr. Thomas Clemens
Director
Educational Media Branch
U. S. Office of Education
Washington 25, D. C.

Dear Tom:

I enclose copies of the three treatments we propose for the motion pictures under our contract. According to the statement of work, your office is to approve the treatments prior to development and shooting of scripts.

These treatments are the result of our Advisory Committee meeting last spring which requested a change in both approach and topic for the films other than those proposed by Mr. Couillard. In general the design of these three treatments, based on the Committee's recommendations and approved in concept by Dr. Torkelson, is:

(1) Audience. The audience is defined as an educated lay audience which would include, of course, teachers in general.

(2) Structure. The Committee felt that the films ought to be a double structure following Bloom's taxonomy and the DAVI position paper concerning media. This required the three films to

(a) cover cognition, affect, and psychomotor skills, and

(b) be concerned with teacher-student, teacher-media-student, and media-student relationships.

The three treatments are designed to meet the structural requirements.

(3) Organization. The treatments organize the three films so that they can be used separately on television and/or, with very small adjustment, be put together and used as a full length film.

The particular subject matter is to some degree only suggestive, although we do feel we will use geography as central to the first film.

The Committee felt that where possible examples should be derived from on-going programs, and we intend to do this.

We are proceeding with preliminary work for scripting the first film but need approval of your office before we can officially proceed. If you do approve without reservation, it would be appreciated if we could find this out as soon as possible. If certain changes are desired or you do not approve of the treatments in general, we would appreciate finding this out as soon as possible as well and would hope that comments concerning changes or new directions would be quite specific.

Personally, I think the story line (as compared with the first two we looked at) has a good deal of merit.

If there are technical questions you would like to settle over the phone, it would probably be best to call Dr. Bernard Kantor, Area Code 213, RI 8-2311, Extension 200.

I hope to see you early in September to talk about a number of things, including the Media Council.

Cordially,

James D. Finn
Project Director

Enclosures

cc: Dr. Bernard Kantor
Mr. Jarvis Couillard
ITM Advisory Committee

JDF:paz

SO THAT'S HOW THEY LEARN

I

COGNITION

Our film opens on one of those bulletin boards we often see in a popular business man's hotel. Here is mounted a permanent roster of badges and insignia of all the service clubs which have their luncheon meetings in such a hotel. We dissolve through to the private dining room where one of the service clubs (we need not know which one) is having luncheon.

The meal is almost finished and we see in amusing detail the kinds of actions and talk which take place at this time. A man gestures emphatically with his fork. A late arrival is served his chicken plate and a melting serving of ice cream at the same time. Another man listens with his face a pattern of rejecting disagreement with what his table mate is saying.

We hear snatches of conversation--and gather that this meeting has something to do with the public schools--"the school board" . . . "the cost of that new school over in Deauville" . . . "Why do they need all these special and remedial courses?" . . . "Why can't these high school secretaries spell?" . . . "It seems the more new equipment they get the more confused everything is" . . . "When you and I went to school. . . ." etc., etc., etc.

The men we see making these remarks we will remember,

for we will see most of them again in their busy everyday life. There is the doctor, the real estate man, the banker, the local contractor, the school coach--a typical cross-section of service club types. In general this is the group that has to be shown, when it comes to innovations in the public schools. In their own lives and businesses they accept eagerly every device which will promote efficiency and effectiveness.

Now our camera centers on two men in an animated discussion. They are successful men of family age--aggressive, ambitious for better things for themselves and for their families.

One is Henry McAdo, Superintendent of Schools. The other is George Driver, successful production manager and vice-president of a local company. Henry is thoughtful--George is emphatic.

HENRY: "Now, George, just what is it you expect from the schools?"

GEORGE: (emphatically) "I want my kids to learn!"

HENRY: (reasonably) "What do you want them to learn?"

GEORGE: "You know what I mean--they should learn to think, to use their heads."

HENRY: "What do you mean--'use their heads'?"

GEORGE: "USE THEIR HEADS--learn everything they are capable of learning."

HENRY: "You mean if your boy is capable of memorizing the constitution we teach him that."

GEORGE: "Yes that--but more than that--you teach them to use their heads to do what they want to do in the best way possible."

HENRY: "You mean if your boy wants to be a hot-rodder we teach him how to soup up an engine and lower a frame?"

GEORGE: "No, I don't mean that. Driver education is O.K. but you've got to teach him good citizenship--and science--and history--and math and English--well--everything. . . ."

HENRY: (thoughtful) "Yes--everything. . . ."

Now the chair introduces the speaker for the luncheon. He praises the Superintendent of Schools--describes the size and complications of his job and points out our children. The kind of adults they will become is largely up to Mr. Henry McAdo, Superintendent of Schools.

During this introduction, the camera has come back to the two men. Mr. McAdo is thoughtful. He is thinking of all that George expects of him. Absently he begins to draw on his napkin.

We see him doodling in close up and see that he has sketched the well known symbol of the log with the teacher on one end and and the student on the other.

The speaker introducing Mr. McAdo points out several salient facts. "He is and has been for twelve years Superintendent of Schools. This is no small job. The Superintendent is the largest single employer in the city. Schools and class-

rooms use more floor space, electricity, office supplies, cleaning and maintenance supplies than all other departments of the city government combined. And, considering the fact that every child is required by law from the time he is six years old to be put in a six-hour day, five days a week, on the business of 'learning.' Your program chairman thought it appropriate to invite him to talk to us today not on the subject of increased school budgets, not on the subject of increasing teachers' salaries, but on the most important subject--WHAT OUR CHILDREN LEARN AND HOW THEY LEARN IT."

There is a burst of applause and the camera scans the audience showing by the reactions that Mr. McAdo is a popular and respected man.

Mr. McAdo is a bit of an actor and has come prepared. He clears a small space on the table and turning lifts into view a simple overhead projector. It is already plugged in and as he switches it on a frame of white light appears on the wall behind him. He jokes, "Being a school teacher, I brought my blackboard with me." There is a murmur of laughter--but the men are curious. Few of them have seen an overhead projector in use--few in our film audience will have seen one. Mr. McAdo begins: "WHAT OUR CHILDREN LEARN AND HOW THEY LEARN IT." As he speaks he writes the subject across the top of the frame and the large letters appear on the screen as he writes.

"I was talking with George Driver as we ate, and I think the subject here expresses exactly what George was getting at when he told me that he wanted his boys to 'learn everything

they're supposed to learn' . . . ' to learn to use their heads' . . . 'to learn to be good citizens' . . . in short, to learn all there is to know--or how to find it and learn it whenever they need to."

George laughs with the others, nodding.

Mr. McAdo: "The range of modern education is tremendous--from the three R's to the technology of space--from driver education to philosophy and poetry. In teaching this vast range of material we have found what we are trying to teach often guides us in HOW it is best taught.

"There was a time when it was said--and some of you may still be feeling it today--that 'the best classroom is a log with the teacher on one end and the student on the other.'" He picks up his napkin and lays it on the projector. There on the wall behind him is the drawing, projected through the linen. There is a reaction of amusement. Mr. McAdo smiles and removes the napkin, placing a series of cells in readiness on the projector. He turns the first cell and we see the same subject, this time done in color and by a proficient artist.

Mr. McAdo: "This concept is the most common one.

"In this situation the teacher teaches--the student listens, understands, questions, responds. The relation is direct--<u>teacher-student</u>.

"But as the student learns and questions, the teacher feels the need of something beyond his own knowledge, and a new element comes into the picture." (He turns a cell and a book appears in the student's hands.)

"We have books, maps, pictures--elements between the student and the teacher. This broadens what the student may learn--and with the development of printing made it possible for many students to share a common experience. The concept is now (he adds another cell) Teacher-MEDIA-Student.

"And of course there is the third situation when the student studies alone. (He removes the cell with the teacher on it and the student remains alone on the log with his book.) This is a direct MEDIA-Student situation--and is perhaps best illustrated by a young man taking a correspondence course and never seeing his teacher at all.

"Now--all of these relationships are brought into being by the teacher--as he or she selects which relationship is most suitable and productive for the particular purpose. Sometimes only one is needed--sometimes all three."

Mr. McAdo realizes he is getting beyond where his audience can follow him and smiles. . . .

"George wants his boy to learn what he's supposed to learn. I think he means he would like his boy to recognize or be able to recall certain information--to have certain information--and more important to develop the intellectual skill and ability to make this knowledge effective--draw inferences and deductions.

"Geography is a good example. Remember how we used to memorize the capital cities of each of the states--define a peninsula--an island--a continent--name the principle products of Venzuela?"

There are nods and smiles from the audience.

"Well, the continents haven't changed their shape, but the people who live on them have certainly changed their ways of living--and we have changed our ways of teaching. (He places the first of a simple geographical projectual on the projector.)

"Let me show you how your child learns geography." Now we dissolve from Mr. McAdo standing beside his overhead projector to an elementary classroom where a young and attractive elementary teacher using the same series of projectuals. We let the teaching process go forward and actually see a third-grade boy learning geography.

First the teacher builds concepts--asks the kinds of questions which help the students come to conclusions. "What is a harbor?" "What is a bay?" "What is it that makes a bay a harbor?"

After the concept is thoroughly established, she begins to provide experiences. River--lake--bay--harbor--these are picked out on the maps--different kinds of maps. Some three-dimensional projectuals may be used here. The child sees roads and shipping points and how these seem to congregate at bays and harbors and the mouths of rivers.

Now we see some terrain--and the teacher here switches to a slide projector--showing slides of desert and ocean--to show the children what these things they have been talking about actually look like.

By this time our film audience and the audience of businessmen realize that this is quite a different way to study

geography from what they knew--as a matter of fact, we are all learning a lesson in geography, and have become so engrossed that we are startled when Mr. McAdo brings us back and comments briefly on the methods of teaching--and points up how the cognitive aspects of learning are taking place.

Now we move to an eighth-grade class in geo-economics. The same teaching tools are present in abundance. Our main character is a thirteen-year-old girl. The teacher--this time a man--leads the class forward, assuming that they are a company board of directors looking for a new plant location. "What would we need? Fresh water--transportation--workers--."

In this class the girl is having difficulty so the teacher selects a programed text and the girl sits down by herself with the book. We watch her using it--in fact use it with her as she reads and grasps the material.

Now again we return briefly to Mr. McAdo who points out that we have now seen all three relationships used to impart information--and to give the student skill in using it to draw inferences and conclusions.

Now once again we return to a high school class, where a boy is engrossed in a class in social studies. Here the level of learning is more complicated, and we learn some of the ways modern man is learning to control his environment. He is beginning literally to move mountains--to command the oceans--and the rain.

This leads to a brief discussion in the affective areas. How does the boy feel about these things? How does he feel about other nations? Other peoples? International controls?

But still the media are there--the teacher deals directly with the student--the teacher uses media between himself and the student--working directly both before and after. And in more and more situations as the students mature, they worked with media alone.

This is the body of film number one. The emphasis has been on the cognitive area of learning, and we will have clearly explained and delineated the three learning situations--Teacher-Student, Teacher-Media-Student, and the student working alone.

We now return to Mr. McAdo as he briefly recapitulates. As he does so he mentions the other areas of learning--the affective area which involves changing the students' point of view--leading him to form opinions--to approve some things and disapprove others. He mentions also the kind of psychomotor skills which are needed in life: to be able to type without spelling each word--to speak a foreign language without pausing to translate each word--to use tools of many kinds, both physical and intellectual.

When his talk is concluded, George Driver and others crowd around the projector. They write their names, draw pictures, and in general behave very much like children who are satisfying their curiosity.

Mr. McAdo watches, smiling. He too is getting a satisfaction--that of a good teacher who sees his students learning.

Music Up
Fade Out
the end. . . .

SO THAT'S HOW THEY LEARN

II

AFFECT

Our film opens in the early evening at George Driver's home. His oldest boy is seated at the dining table finishing a math assignment. (Note: All three of the Driver children are those we first saw in film number one.)

George watches him work, thinking of Mr. McAdo's explanations. He crosses to the table and looks over the boy's shoulder.

The boy is working on some of the new mathematical concepts, which look considerably different than the mathematics George learned to long ago.

George studies the strange figures in silence for a moment and then brings himself to ask for an explanation.

The boy begins to explain and we dissolve into an elementary mathematics course where the youngest of the Drivers is learning math.

Fairly quickly we see the seventh-grade sister learning her math, then move to an in-school demonstration of high school mathematics.

The enthusiasm with which the boy explains the various steps, and his obvious familiarity with the new teaching media, prompt George to ask the age old question . . .

"Do you really like school?" Surprisingly enough, the boy answers positively. Of course he likes school. Why

shouldn't he like it? Look at all the things he is learning.

Now we really begin to see the affective areas of the boy's learning. The activities of his class and school clubs which help form attitudes about democratic procedures and learn the importance of working with others.

We see some of his English and communications courses and see the broadening of his range of feeling as he reads great prose and poetry.

We see his participation in the school orchestra and feel the same direct pleasure he gets from understanding and participating in music.

We see him in classes studying the social and philosophic foundations of society--a class in human relations--or psychology.

As we participate in these critical revelations of the learning process, we will again savor and be excited by something too many of us have long forgotten, the joy of learning.

Not only will we learn--but we will learn in new ways--for again in film number two, we will feel the excitement of using new media, and experiencing the best of that kind of teaching our children know every day.

In this film also, we have begun to see new schools--new planning for the use of space, new experiments in flexible classrooms, team teaching, the coordinated use of television.

The use of media will never overpower the teaching which is taking place, but will be used forcefully and to their maximum effectiveness when and where they are needed to teach best.

Music Up
Fade Out
the end. . . .

SO THAT'S HOW THEY LEARN

III

PSYCHOMOTOR

Our third film opens as George Driver drops his older boy and girl at the school on his way to work.

Because he has been stirred by Mr. McAdo's explanations, and what his son has told him of the new kinds of learning, George Driver looks at the mass of young men and women with new eyes.

These are the same young people who are really going to do all the things that George Driver knows can be done. They will go to the moon, they will work toward new understanding between nations, they will build a way of life that will minimize, even eliminate, the hard physical labor of the past and open a new world--not of idleness-but of constant purposeful and satisfying learning.

George Driver thinks: "Perhaps this is the answer to automation and computerized abundance--a civilization where knowledge and education is the final purpose of society."

Ah well--back to the office.

But at the office the immediate problems are increasing. Automation-what provision to make for retraining older employees? What to do with the increasing crowd of new applicants who hardly dare train themselves in specific skills?

We see a brief sequence which points up this widespread problem as it applies to George Driver--who as we remember is

manager and vice-president of a local company.

We present George's problems realistically--sit in on his meeting with the union steward--a discussion with the plant designer and efficiency expert--a discussion with the employment manager.

George thinks over these several problems, then reaches for the phone and calls Mr. McAdo. They arrange a meeting with the principal of the Industrial High School.

Now follows a sequence in which George Driver really for the first time gets a concept of the size and scope of modern public education.

With Mr. McAdo as his guide they start with the Industrial High School and see the teaching of skills not only in the intellectual area of commercial math, accounting, office management, etc., but specifically in eye and hand coordination as taught in the courses in typing, operating office machines, and all the skilled trades of the mechanics where the hand must be trained to do the will of the eye and brain.

Here too the use of visuals--overhead projectors, slides, films, charts, models--is constantly before us as a part of the teachers' tools-the media.

We see programed learning in many fields--and understand the effective operation of the language lab with its multiple tape recorders and master controls.

We see in-service training as it takes place in large industrial organizations--and see other situations where industry is working with the public schools in providing education and training for young people who may later be employees.

It is this cross-fertilization--the engineer teaching in the school--the school teacher using his skills for specific job training--that excites George.

Mr. McAdo points out what happens to a man of business when he is forced to organize his very real knowledge and present it in an orderly fashion to a class in business administration.

He points out too what happens to the students who can probe and question for this real knowledge.

They visit a class in business management--George is introduced to the teacher, who in turn introduces George as an active company manager to the class.

One of the students asks a question. George answers. There is another question--and another and George is surprised to find himself holding an impromptu seminar.

Mr. McAdo and the teacher smile.

George and Mr. McAdo end their afternoon and find a solution to George's problem at the plant. If he wants specific skills in young people--if he wants to retrain senior workers in new skills--why doesn't he organize a special course himself. . . .

A classroom is available for evening classes--all the latest and best teaching media are at hand. Mr. McAdo and George step into an empty classroom as they talk. Mr. McAdo urges him to give it a try.

George steps up to the head of the room and looks around. He sees thr projectors, the modern desks, the overhead projector beside him--he turns it on and picks up a pencil. Quickly

he tries his hand, sketching the familiar symbol of the log with the student and teacher.

Mr. McAdo and George both laugh aloud--and as George flips the light in the projector, we suspect that George is well on his way to solving his problems at the plant--and that perhaps Mr. McAdo has found a new teacher.

Music Up

Fade Out

the end . . . .

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

December 21, 1964

Dr. James D. Finn
Director, Instructional Technology
and Media Project
School of Education
University of Southern California
Los Angeles, California 90007

Dear Dr. Finn:

This will acknowledge receipt of your letter of December 9, together with the treatments for the three films to be prepared under the ITM project. Both Tom Clemens and I have reviewed these treatments and we believe that you may proceed to the scripting phase. Apparently, these treatments have been under consideration for some time and have already been discussed with Dr. Torkelson in some detail.

As to my personal reactions, I would be particularly concerned, as I know you are, about the quality of casting for these films. In so many instances, films of this type have not achieved their objectives because they have been rejected as false or misleading by teachers.

The treatment for film number two is rather sketchy but I assume it would show such situations as large group instruction, team teaching, individualized instruction, the use of programed materials and similar situations. In film three, is the term industrial high school one that is nationally recognized and accepted? In Pennsylvania for example, this type of high school is usually called an area technical school. Perhaps the narration could carry some explanation to cover the varied terminology by which these schools are identified in various parts of the nation.

Finally, we must consider how these film treatments relate to the film proposed by the Educational Media Council. If I have interpreted the EMC proposal correctly, their film would largely duplicate what you have proposed here under ITM. I would appreciate hearing from you on this matter since Ed Foster is quite anxious to reach a decision regarding the EMC film.

All best wishes for a pleasant Holiday.

Sincerely yours,

Hugh F. McKeegan
Research Coordinator
Media Research and Dissemination
Branch

BRIEF STATUS REPORT
ITM FILM PROJECT

December 6, 1965

I. Status of ITM films

Treatments have been approved (see correspondence). Shooting scripts are in preparation.

The writer would appreciate any comments and suggestions on the treatments. Such comments can be very helpful at this time, as suggestions made now can be incorporated into the shooting script in preparation.

II. Primary, Junior High, and High Schools have been visited

Primary school sequences (3rd grade) will be developed and photographed at Fountain Valley School (see brochure on display table).

Junior high school (7th grade) has not been definitely selected. Four schools visited.

The high school selected is Rowland High School in La Puente. New, excellent team-taught large group instruction, good equipment, etc.

III. Details of teaching techniques and use of media are being worked out with technical advisors and the teachers who will appear in the films.

Detailed, full-dialogue scripting of these situations is now going forward.

STATUS REPORT ON FILMS TO BE PRODUCED FOR THE
U.S. OFFICE OF EDUCATION
BY THE CINEMA DEPARTMENT, USC
INSTRUCTIONAL TECHNOLOGY AND MEDIA PROJECT

During the fall and winter of 1963-64, preliminary discussions and meetings took place to acquaint the writer-producer with the philosophy underlying the program, and various approaches to the problems of instruction, and the educational objectives underlying the studies, and use of both well-known and newer media.

All available films in this field were reviewed by the writer-producer and Cinema Department staff.

On the basis of this, research treatments for the three films were prepared and presented to the Advisory Committee at a meeting at Cherry Hill, New Jersey, in April, 1964.

After a discussion and comments by members of the Committee, an approach based on the three aspects of learning - cognitive, affective, and psychomotor - was approved.

On the basis of this new direction, new treatments were prepared and submitted to the Office of Education in August 1964.

Without waiting for approval of the new treatments by the U.S. Office, more intensive research was undertaken for the preparation of the shooting of scripts.

This involved intensive visiting and observation of selected teaching situations which might serve as models for the kind of instructional technology and media which would be visually presented in the films.

The treatments were followed as a framework for this research, and the writer and ITM consultant visited many schools in the area and studied the teaching and use of media as it was taking place.

In the Cognitive area, geography had been selected as the subject which would best emphasize this aspect of learning. Classes and teachers were observed in the third grades, the seventh grades, and the ninth grades. (It is felt that a junior high school situation would be used for the seventh grade rather than an eight grade school, although the best teaching and use of media observed happened to be in a new elementary school district where teachers were able to take advantage of new techniques incorporated in the school buildings and philosophy.) The writer feels a good new junior high school can be found which will utilize these same methods.

In the Affective area, social studies was selected as best illustrating affective learning. This was also observed in

the schools visited, although our emphasis was on geography which will be the basic subject carrying through the first film.

Psychomotor activity is the most difficult of the subjects to evaluate and observe, but when we begin to concentrate on this aspect of learning, the writer feels certain we can build an effective film presentation starting with eye-hand coordination, games, art, music, typing, and leading to advanced work in shops, trade schools, and industrial applications.

The writer and consultant are at the present time collecting all the physical materials available for the teaching of geography in third, seventh, and ninth grades.

This material involves books, maps, slide films, lists of motion pictures, projectuals, globes, charts, pictorial files, and other material.

As is obvious, we cannot present all this material in use in any one of the films, but our endeavor is to have as much of this material as possible for a meeting of the Advisory Committee. This will give the writer an opportunity of following the Committee's recommendation in the specific material and techniques of teaching to be used.

Meanwhile, the script for the first film is being completed, including the teaching sequences and the use of materials which the writer and consultant feel best portray the kind of teaching which should be shown.

AN ANALYSIS OF THE PUBLICATION PROGRAM OF THE EDUCATIONAL MEDIA BRANCH

by

William H. Allen
ITM Editorial Director

The purpose of this report is to examine the publications program of the Educational Media Branch, evaluate it, and make some recommendations relative to its implementation. Although this activity expands on the designated responsibility of the monograph preparation phase of the ITM Project, it seems desirable to place the monographs within the structure of the entire publications program.

Publications in the Dissemination of Media Research Information

In a report prepared by the writer for the Media Branch on April 11, 1963, it was pointed out that there are five types of dissemination activities which the Media Branch should consider: (1) fact-finding, (2) training, (3) providing services, (4) encouraging application and stimulating education change, and (5) disseminating information. It was also pointed out that there appear to be five target audiences or users of disseminated information: (1) educational administrators, (2) teacher educators, (3) media specialists and researchers, (4) media users in other disciplines, and (5) the general public.

If these five types of activities and five audience groups are organized into a grid, as shown in Table 1, it becomes immediately apparent that publications are the most appropriate means for disseminating information across the board to all users. Yet the fact is that this objective has not been realized. It is the purpose of this paper to suggest some remedies to correct these deficiencies.

Types of Current Media Branch Publications

The publications of the Media Branch may be grouped into four general categories: (1) Monographs, (2) Miscellaneous publications, (3) Service publications and reprints, and (4) final reports of Title VII, Part A projects.

Table 1

PLACE OF PUBLICATIONS IN THE MEDIA PROGRAM

Types of Activities

Audiences	Fact Finding	Training	Providing Services	Stimulating Change	Disseminating Information
Educational Administrators	1. Survey data and statistics on equipment, personnel, use, etc.	1. Visitation list of representative and outstanding media programs. 2. Information about in-service media training programs.	1. Information regarding media programs and publications. 2. Lists of media consultants. 3. Grants and contracts funded.	1. Reports of innovative media programs.	1. Publications of media standards and guidelines. 2. Publications of research generalizations and media developments through professional journals and mass media.
Teacher Educators	1. Survey data and statistics relating to teacher education.	1. Information about pre-service media training programs. 2. Visitation lists.	1. Information regarding media programs and publications. 2. Grants and contracts funded.	1. Reports of innovative teacher education programs in media.	1. Publications of research generalizations and media developments through professional journals and mass media.
Media Specialists and Researchers	1. Survey data and statistics on all aspects of media programs.	1. Information about media training programs. 2. Information about programs for	1. Information regarding media programs, research and publications. 2. Lists of	1. Reports of innovative media programs.	1. Publications of research generalizations in journals and monographs. 2. Publications of media standards and guidelines.

Table 1 (continued)

Types of Activities

Audiences	Fact Finding	Training	Providing Services	Stimulating Change	Disseminating Information
Media Specialists and Researchers (continued)	2. Media research in progress.	training in media research 3. Visitation lists.	media consultants. 3. Grants and contracts funded.		3. Publication of media trends, organization, patterns of use. 4. Publication of research reports. 5. Publication of research abstracts.
Media Users in	1. Survey data and statistics on media applications to specific fields.	1. Information on media training programs. 2. Visitation lists.	1. Information regarding media programs, research and publications. 2. Lists of media consultants. 3. Grants and contracts funded.	1. Reports of innovative media programs.	1. Publications about media characteristics and applications through specialized information channels. 2. Publication of research findings applicable to other disciplines and specializations.
General Public	1. Public opinion of media importance and application.		1. Information regarding media in education.	1. Popular articles about innovative media programs.	1. Popularized articles relating to media uses in classrooms and influence on education.

1. Monographs. A series of monographs is currently being published by the Media Branch (see Appendix A). Of the ten monographs commissioned, only the first three have been published. These monographs range theoretical formulations, through surveys of research, to specifications for equipment. There appears to be no particular rationale for publication as a monograph rather than as a miscellaneous report. The ITM Project will plan and edit approximately ten additional monographs, and these have been defined as being of a "scholarly nature covering a range of subjects in the new media field." In the judgment of the ITM Advisory Panel, these monographs could range from "think" papers expressing the viewpoints of individual researchers and theoreticians to "applied" papers organizing and synthesizing the knowledge in segments of the media field into a form suitable for applications.

2. Miscellaneous publications. These publications cover a range of media topics (see Appendix B). Although they appear in the main to be compilations of media information, reports of conferences, and bibliographies, they also contain titles that meet the monograph definition.

3. 3. Service Publications and Reprints. This category of publication tends to be informational in nature, non-substantive in content, of shorter length, and usually distributed free (see Appendix C). In some cases, the line distinguishing these from Miscellaneous Publications is fuzzy.

4. Title VII, Part A Final Reports. These publications are clearly distinguishable from other Media Branch publications. They are not published by the government but appear in a variety of forms from mimeograph to type-set and are supplied to the Media Branch in the quantity of only 200 quantities to meet the conditions of Part A grants for final reports. The distribution from the Media Branch is to a small select mailing list and to about 70 depository libraries through the Documents Expediting Project of the Library of Congress. They are also made available on microfilm or xerography through University Microfilms and are abstracted in Audio-Visual Communication Review. They are not otherwise available through the Media Branch. To date, about 125 of these reports have been completed.

Problems Affecting the Free Flow of Media Information

Although the Title VII program has been in operation for over five years, information dissemination in publication form has been rather meager; what are the reasons for this condition?

1. Lack of a Dissemination Policy. Although various efforts have been made by the Media Branch staff to develop a conceptual framework into which the dissemination program will fit, the efforts have been handicapped by lack of staff, lack of time, and excessive personnel turnover. The present failure to appoint a Media Branch Director since C. Walter Stone's resignation over 18 months ago has proved to be a serious handicap to the program and the development of policy. Because of the pressures and limitations under which the staff must operate, decisions must be made on a day-to-day basis rather than as part of an overall dissemination policy.

2. Health, Education, and Welfare Department Delay. There appear to be unnecessarily lengthy delays by HEW publications personnel in approving and processing manuscripts. These delays keep vital media information out of the communications channels, and much timely information is allowed to become stale.

3. U. S. Government Printing Office Policies. The U. S. Government Printing Office's policies regarding waivers for printing on the outside is another deterrent to the free flow of media information. When delays occasioned by these policies are added to the delays in the earlier stages of the publication process, the impact of the original manuscript is seriously blunted.

4. Failure to Require Publication. Lack of a positive policy requiring journal publication (or publication in a form assuring wider dissemination of research findings and bibliographical cataloging) limits the diffusion of information from Title VII research grants and contracts. Although most recipients of Title VII grants indicate in their proposals that they will prepare articles for journal publication, few of them actually follow through on this commitment. Failure to enforce this requirement further limits the research information reaching the user.

Importance of Publications in the Transfer of Research Information

Implied in the above discussion is a basic dissatisfaction with the current media publications program. Although Title VII has been directly charged with the responsibility of dissemination of media research information, the published output from the program is just not adequate. It will be helpful to relate this problem to the report of the President's Science Advisory Committee on the responsibilities of the technical community and the government in the transfer of information. This committee concluded:

> "Transfer of information is an inseparable part of research and development. All those concerned with research and development--individual scientists and engineers, industrial and academic research establishments, technical societies, Government agencies--must accept responsibility for the transfer of information in the same degree and spirit that they accept responsibility for research and development itself."[1]

The Committee made two recommendations that have particular pertinence to the publication activities of the Media Branch. They are

> "1. Each Federal agency concerned with science and technology must accept its responsibility for information activities in fields that are relevant to its mission. Each agency must devote an appreciable fraction of its talent and other resources to support of information activities.
>
> "2. To carry out these broad responsibilities each agency should establish a highly placed focal point of responsibility for information activities that is part of the research and development arm, not of some administrative arm, of the agency."[2]

Implicit in the President's Science Advisory Committee report is the notion that the "transfer of information" will occur largely through the medium of publications and the subsequent retrieval of the published information. Thus, a burden is placed on the researcher and agency alike

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[1] The President's Science Advisory Committee. Science, Government, and Information. Washington, D.C.: Superintendent of Documents, U. S. Government Printing Office, 1963, p. 1.

[2] Ibid., p. 4.

to optimize the publication process. In a program such as Educational Media, such mission is written into the words of the legislation. The following recommendations are thus aimed at expediting this information transfer process.

Recommendations for Action

1. Conduct, by the Educational Media Branch, of a study to develop a publications and research dissemination policy, this policy to be formalized in writing and widely circulated to the media research community. The exact procedure to follow is subject to discussion, but the convening of a seminar panel to probe the many facets of the dissemination problem might be indicated. This seminar could be organized by the ITM Project.

2. Implementation of the panel's recommendations by means of contracts with appropriate institutions, organizations, and individuals.

3. In the meantime, the Educational Media Branch should continue its present dissemination policy, using its best judgment as to the course to follow in disseminating research information.

4. Differentiate between "monographs" and "miscellaneous publications" in order to develop a more consistent publication policy.

5. Make clear to contractors and researchers what they might expect in the way of publication by the government or by an outside agency. These organizations and individuals have a right to know in advance whether or not a year or more of effort is going to be made available to the research community (and in what form), whether they will be required to obtain a publisher through their own efforts, or whether the manuscript or report will merely be filed away. It is reasonable to expect that, if a project is worth funding, some decision could also be made relative to the publishability of the results, and this program included in the contract. In a system where hard-copy publication is a tangible benefit to the researcher, he should have more assurance of such publication than the noncommital sentence in the contract: "Contractor will provide six copies, in draft, of the work to be done."

6. Investigate the publication policies of the Department of Health, Education, and Welfare and of the U. S. Government Printing Office with the intent of expediting the free flow of research information.

STATUS REPORT

MONOGRAPH EDITORIAL ACTIVITIES

by

William H. Allen
ITM Editorial Director

A. The following monograph has been funded by Educational Media Branch and is in preparation:

1. Lester Beck, "Educational Media for the Pre-School Child and Related Disadvantaged Groups"

B. Outline and proposal for the following monograph was submitted to the Educational Media Branch, November 24, 1964:

1. John P. Vergis and Vernon S. Gerlach, "New Media and Inservice Education"

C. The following monographs are in various stages of outline and proposal preparation:

1. Robert W. Wagner, "Design in Materials of Instruction"

2. Seth Spaulding, "New Educational Media for the Development of Emerging Nations"

3. Robert Gerletti, "The Administration of Educational Media Programs"

D. The following monograph was postponed upon the advice of Thomas Clemens pending the completion of a feasibility study to be conducted by Prof. Pat Hazard at Beaver College:

1. "Educational Media in the Teaching of English"

E. The following monographs, previously planned, are pending assignment because of the inability of the authors to write the monographs:

1. "Technical Design of Industrial Media Systems" (Philip Lewis became a member of the Title VII Advisory Committee and thus ineligible for the project.)

2. "The Communication Approach to Learning" (George Gerbner and David Barlo both have full loads)

F. The following monographs are pending decision because of the current confusion in the fields and difficulty of identifying authors with the necessary subject matter and media backgrounds:

1. "Educational Media in the Teaching of Social Studies"

2. "Educational Media in Vocational Education"

PROPOSAL FOR A MONOGRAPH

TITLE: DESIGN IN MATERIALS OF INSTRUCTION

FOR:

The Instructional Technology and Media Project
School of Education, University of Southern California
Los, Angeles, California

Editor: Robert W. Wagner

December 1, 1964

THE PROBLEM A considerable amount of data has been collected recently on school building design.

There have also been challenging statements on the design of equipment (Humboldt W. Leverenz and Malcolm G. Townsley, "The Design of Instructional Equipment: Two Views." Occasional Paper No. 8, NEA Technological Development Project; and John Flory and William H. Allen, "Designing New Apparatus for Learning: A Survey of Needs for, and Developments in Audiovisual Devices Suitable for Educational Uses," for the Society of Motion Picture and Television Engineers under contract with the U. S. Office of Education, 1963).

Little has been done, however, to pull together significant work related to the design of the media of instruction although much scattered evidence exists. In the case of the motion picture, there are significant collections, but these have not been related in terms of general design principles which might apply to other media as well.

This problem was defined by Allen in the Spring, 1959 issue of the AVCR:
"Might there be a set of unified principles for learning from visual materials of all kinds? It seems important to search for a basic understanding of the newer media as well as to study only their application to teaching.... Further study is needed of production variables, with all kinds of media, particularly as they relate to audience-learner characteristics and the techniques of classroom use." ("Research on New Educational Media," p. 95.)

Meierhenry, writing in the November-December, 1962 issue of AVCR asks:
"How much information can visuals handle? What kinds of information can they handle best? These questions obviously involve basic research on information content of visuals....If studies of new approaches and techniques to make media presentations more effective in developing student creativeness, problem-solving abilities and greater transfer of learning were conducted, what would they reveal?"
("AV Materials: Needed Research," pp. 312, 313).

Finn, in his introduction to Occasional Paper No. 8, "The Design of Instructional Equipment: Two Views" reminds us:
"...that the principles of design do not end with equipment--that they do, indeed, extend into the area of materials as well."

This is the point at which the proposed monograph would continue.

THE PURPOSE This monograph would bring together significant design elements in a number of types of audio-visual materials of instruction with an exploration of some of the principles of effective design which apply to all, based upon learning theory, research evidence, and experience of certain capable practioners.

Authors would be selected for their ability to relate pertinent research and practice to the improvement of the design of the kinds of instructional materials we shall need in the future. Emphasis would be placed on simplicity, readability, and succinctness of literary style. The use of illustrative material would be required and integration of verbal-visual information would need to command the special attention of those assuming the responsibilities of authorship in this particular monograph.

The primary readership is conceived to be teachers, administrators, and producers of educational materials. The effect hoped for is the strengthening of the link between research, production, and utilization.

CONTENT The monograph would consist of approximately twelve sections or chapters, each of which might include two or more short contributions by two or more different authors. It is felt that since the total effect of the monograph ought to be in terms of principles of design that authors should be approached in terms of succinct statements of 1500 but no more than 2000 words. This limitation would contribute to sharpness of focus, readability, white space, and room for illustrative material so necessary in a monograph on this subject.

The general section, or chapter headings, would include the following:

INTRODUCTION A statement of purposes in which "Media Design" is interpreted mainly in terms of stimulus materials, with relationships made to other areas of design including equipment, buildings, and "design" as it is interpreted in terms of educational research, and curriculum-- that is to say, design in education. (Author: Robert Wagner).

1. Pictorial-Photographic — The elements of design in drawings, photographs, and other representational material. Suggested authors: Malcolm Fleming ("Pictorial Composition: An Essay On Its Plight," AVCR, V. 10, N. 4, 1962;) Seth Spaulding ("Research on Pictorial Illustration," AVCR, V. 3, Winter, 1955) Stuart Cooney ("The Role of the Pictorial in Message Design," AVCR, V. 9, 1961) Gyorgy Kepes (The Language of Vision, P. Theobald, Chicago, 1944).

2. Graphics — Design elements in the non-representational materials such as charts, graphs, and other abstract graphic conceptions. Suggested authors: John Ball and Francis Byrnes (Research, Principles, and Practices in Visual Communication, DAVI-NEA) Wilfred Veneendaal (Michigan

State University) Maurice Kessman(Director of the Office of Educational Research, Rochester Institute of Technology).

3. Display Exhibits — The combination of graphic materials into a design for the exposition of a single subject or concept in a single array. Suggested authors: John Vergis (University of Arizona) Jerrold Kemp (Planning, and Producing AV Materials, Chandler Publishing Co., San Francisco, 1963).

4. Museum — A greatly neglected factor in the face of a growing number of institutional displays on the national and local levels. This segment would concern itself with the design of total exhibits geared to the public information level in what must be self-motivational, multi-media presentations devoted to the general and in some cases to specialized audiences. Suggested authors to be drawn from an examination of institutions such as the Cleveland Health Museum, the Chicago Museum of Science and Industry, the Los Angeles County Museum, and the Museum of Modern Art.

5. Motion Picture — There is considerable work here in educational film design including the implications found in Hoban's "Movies that Teach," May's "Learning from Films," and in the many researches such as those of Carpenter, Allen, and others. There is also a large amount of creative opinion on film design (see John B. Kuiper: "A Selected and Annotated Bibliography of Books and Articles on Pictorial Composition in the Cinema" UFPA Journal V. 10, No. 4, 1958). Suggested authors: Charles Hoban, L. P. Greenhill, Mark A. May. Practioners: George Stoney, Charles Palmer, Francis Thompson.

6. Television — Many of the design elements in an educational film apply to educational television. As with film, it may be useful to compare these elements as described by a thoughtful practioner known for his informational approach (Fred Friendly, David Wolper) with that of the theorist and educator (William Bluem, of Syracruse University and author of a forthcoming book "The Television Documentary;" Edgar Crane or Malcolm McLean, Jr. "Five Dimensions of Style in ETV Programs" AVCR V. 10, N. 3, 1962, et al.)

7. Texts — Texts should be a part of this monograph with linkage to other elements of design (e.g. the text-film influences the design of the literature with which it is combined; the pictorial elements discussed in other sections, relate, etc.) Suggested authors: Karl U. Smith ("Scientific Principles of Textbook Design and Illustrations" AVCR, V. 12, N. 3, 1964. Also see "New Media of Education and their Effects on Publishers" Publisher's Weekly, Jan. 7, 1963, pp. 38-39. Again, a combination of comment from commercial educational publishers and research in the field might yield useful, practical design elements here.

8. **Programmed Materials** — The design of programmed materials and of programming itself should be included in this monograph although exploration is needed here. Suggested authors: Dale Brethouwer ("Programmed Instruction and Programming Techniques: A Program Writers Manual" Aldine Publishing Co, Chicago); David Ecker ("Teaching Machines and Aesthetic Values" Educational Theory, V. XII, July, 1962); Lewis Eigan ("Comparison of Three Modes of Presenting a Programmed Instruction Sequence" Jour. of Educ. Research, V. XII, July, 1962); David Klaus, The Art of Auto-Instructional Programming, Pittsburg, American Institute for Research, 1960; Susan Markle (Good and Bad Frames, John Wiley & Sons, 1964); Leonard Silvern ("Teaching Machine Technology: the State of the Art" AVCR, V. X, N. 3, 1962); John Gilpin ("The Design and Evaluation of Instructional Systems" AVCR, V. X, N.2, 1962).

9. **Radio, Taped Materials and other Audio Presentations** — The role of radio has been neglected of late in educational literature, but new applications have been found in broadcasting including the medical profession's "Grand Rounds" via radio; significant tape libraries; uses of audio materials in programmed instruction; tele-lectures via telephone hook-ups, and the like. Suggested authors: Edward Stasheff (University of Michigan); Vernon Bronson (N. A. E. B.); Philip Lewis (Chicago City Schools); Marshall McLuhan ("Radio: the Tribal Drum" AVCR, V. 12, Summer, 1964).

10. **A Note on Media in Advertising** — Numerous references have been made to the failure of educators, especially those involved in the media field, to relate findings in the field of advertising and commercial display to instructional materials. Design elements tested in terms of sales, attention-getting, and the like, ought to be at least suggested in this monograph. Different terms are used to describe the growing field of graphics in advertising, industrial design, "environmental design," and other forms of graphic communication to "sell" ideas, products, and "action programs" to the public. (See Robert Osborn, Communication. The Art of Understanding and Being Understood. Hastings House, 1963. Also Advertising Age magazine). Suggested authors: The media director of a large ad agency such as Weiss and Geller, B. B. D. & O., or Ernest Dichter (Institute for Motivational Research, Inc.).

11. **A Note on the Design of International Media in Education** — There are two general assumptions involved here. One is that the media, because of their universal visual and auditory appeals, transcend international barriers (cognitive theory). The other is that audio-visual materials of instruction cannot be effectively exported to, let's say, the educational systems of underdeveloped nations without careful "translation." It would be the purpose of this chapter to explore design elements relating to this very important proposition, based on the assumption that what happens in the educational system of one nation will reflect in that of other

nations in a world bound ever closer by the ties of international communication. Suggested authors: Gale Griswold (I. C. A.); Wilbert Pearson (U. S. I. A.); Robert LeFranc (St. Cloud, France).

12. Summary and Conclusions on Elements of Design in Exposition

This would pull together the key factors in design which may coincide and relate significant research and practical experience to effective application to education. Frankly, the point of view would be to effect a useful blend of research and practice upon which to encourage and support a continuing and mutual fertilization between theory and practice. This chapter would be the responsibility of the editor, with key reaction statements from others by whom the chapters would be read and commented upon.

FORMAT

It would seem essential to place emphasis on the design of the total work itself so that it might exemplify elements identified in the body of the monograph. It should be a model of type style; pictorial-verbal layout; paper type and quality; and readability based on research in this area.

Consideration should be given to designing the content (both verbal and pictorical) for effective "translation" into (a) other languages, and (b) into other media forms for maximum dissemination.

Part of the problem of such translation is that this question is seldom asked during the planning stages of educational material. Here is an opportunity to deliberately plan for moving material into other tongues and other media.

In the latter form, for example, tear-sheets of print segments might be provided for duplication by Xerox or other hard-copy methods. Illustrations as well as print pages might conform to the Armed Forces "universal art principle" so that they may be reproduced effectively as slides, overhead transparencies, and other forms.

In contrast to traditional "self-contained" print form, this monograph could be intentionally designed to be self-perpetuating, reborn and even rearranged in other forms.

Someone like Charles Eames might be consulted here if funds permit, although audio-visual specialists such as John Vergis, Wilfred Veneedaal, Maurice Kessman, and other imaginative, capable people of this type would be good prospects.

Obviously, this approach would be expensive, perhaps outside the capabilities of the U. S. Printing Office, and perhaps outside the interests of the U. S. Office of Education. However, it seems worth exploring.

PROPOSED OUTLINE

New Media and Inservice Education

by

John P. Vergis

and

Vernon Gerlach

INTRODUCTION: Assumptions and Rationale for a Systems Approach

1. Newer media refers to media in the audiovisual category with emphasis on automated projects and electronic devices.

2. The monograph's readers will be both lay and AV educator.

3. The monograph will not attempt to duplicate in any depth what has already been done.

4. The monograph will be selective rather than inclusive with respect to utilization of filmstrips, recordings, etc.

5. The monograph will be selective rather than inclusive with respect to examples of inservice education employing newer media.

6. The described techniques will be presented in a manner designated to stimulate interested readers to make applications to their own situation.

7. Inservice education refers to all levels of teaching: elementary, secondary, college and adult.

Rationale:

Utilization of newer media for inservice education of teachers varies along a continuum: at one extreme media are nebulously attached to the periphery of a teaching-learning process, while at the other extreme selected media are the system.

The monograph will develop a definition of a systems approach. It will describe inservice programs in which a systems approach is being utilized; it will contrast such programs with other, perhaps more traditional, programs; and it will make recommendations concerning effective utilization of newer media for inservice education of teachers.

CHAPTERS

I. INSERVICE EDUCATION: AN INSTRUMENT OF CHANGE

A. A value-oriented rationale

1. The limitations of a message-media approach

2. The limitations of a social-scientific approach

3. The necessity of a combination of message-media competence with social-scientific competence

B. Ends-centered vs. means-centered inservice education of teachers

1. The definition of a means-centered program

a. The technological advances of our age

b. The trivial uses of these advances

2. The definition of an ends-centered program

a. The definition of behavior change (or learning)

b. The pupil as the object of change

c. The teacher as the object of change

d. The teacher as the agent of change with respect to the learner

e. The administrator as the object of change

f. The administrator as the agent of change with respect to the teacher

g. The administrator as the agent of change with respect to the learner

3. The means of effecting desired ends

a. The changing curriculum (the new knowledge)

b. The changing analysis of instruction (the new instruction theories)

c. The new learning theories

d. The new materials

e. The new equipment

4. The evaluation process

II. REVIEW OF PAST AND CURRENT STATUS OF INSERVICE EDUCATION

A. The past

1. Condition of teachers: pre-1920

a. Immature

b. Poorly educated

c. Inexperienced

2. Inservice education designed to correct deficiencies

a. Teachers' institutes

(1) Began with subject matter emphasis and gradually included more methodology

(2) Criticism of institute mounted toward end of century due to its outmoded techniques

b. Period of 1890-1930 introduced changes

(1) Demand for qualified teachers

(2) Upgrading of personnel as a result

c. Emergence of newer vehicles of inservice education due to improvement of teachers' preservice training

(1) Summer normal schools

(2) Extension courses

(3) Correspondence courses

(4) Reading circles

(5) Rise of the supervisory function

B. The interim

1. Inservice education becomes an administrative-supervisory function - 1930

2. Experiments with the scientific method

a. Begun by educational theorists desiring to supplant prior authority by one based on science

b. Rise of educational measurement

c. Development of interest in laws of learning, etc.

3. Teachers' approximate professional status

a. Certification requirements appear

b. Improvement in position stability

C. The present

1. Changing emphasis away from inservice education administration directed to professional growth of teachers on a cooperative basis

a. Indicated by staff group activity aimed at applying more research in finding solution to problems

b. Appearance of consultant and/or resource person

c. However, traditional thinking continues until a number of poorly educated and trained teachers is sharply reduced

2. Patterns of inservice education

a. Centralized approach - central administration

b. Centrally co-ordinated approach--authority is a multi-school central committee

c. De-centralized approach - single school committees working within own school

3. Current inservice education practices

a. Classroom visitation

b. Individual conference

c. Faculty or group meeting

d. Intervisitation

e. Workshop

f. Institute

g. Additional college training

h. Professional reading

i. Etc.

4. Methods of inservice education in selected other professions

a. Medicine

b. Law

c. Engineering

5. Methods of inservice education in selected foreign educational systems

a. England

b. France

c. Germany

d. Russia

6. Problems yet to be solved

a. Teacher inertia and negative attitude toward inservice education programs - satisfaction with status quo

b. Lack of unity and consistency in total school program - philosophy conflicts

c. Lack of sufficient time to develop teacher interest in the inservice education programs

d. Teacher use of tenure to retain position

e. High turnover of staff personnel

f. Insufficient funds for programs

g. Low salaries and too much work create apathy

D. An eye to the future

1. Emerging trends in inservice education

2. Education becomes aware of technology

III. NEW MEDIA AND THEIR IMPLICATIONS

A. Practice, science, and technology

1. Historical perspective

2. Applied to new media (hardware)

B. Educational technology in education

1. "We teach as we have been taught"

2. New media and human behavior

3. New media and communication

4. New media and instruction

C. Rationale for application to inservice education

D. Applications of new media to inservice education

IV - VIII. CASE STUDIES OF INSERVICE TEACHER EDUCATION PROGRAMS

A. Criteria for a specific inservice program

(Case studies of programs may be selected on the basis of grade level - elementary, junior high, senior high, college, adult; - region - west, South, New England, etc.; - size or type of system- rural, small city, large city, county, state, etc.)

B. Observations of a specific program

Cases such as the following might be considered: (Although some of these illustrations are research examples, they do not necessarily imply that the case studies would be of operations of short temporal duration. Rather, ongoing programs would be preferred.)

1. National Science Foundation Summer Institute in Chemistry at Bowdoin College, Maine

2. Traveling Science Teacher Program at Oak Ridge, Tennessee

3. Use of Television in Inservice Education sponsored by the University of North Carolina and reported by Don Tarbet.

4. Flanders, Ned A., Helping Teachers Change Their Behavior (USOE Title VII Project No. 003)

5. Fritz, John O., The Effect on Instruction of the Complementary Use of Audio-Visual Media with Modified Patterns in the Use of the Teaching Staff (USOE Title VII Project No 399)

IX. A. Analysis of the case studies

B. Recommendations

APPENDIX

A. Selected examples of excellence in inservice education

1. Location

2. Name of individual in charge

3. One-sentence description of its most distinctive characteristic

B. Bibliography

1. Texts, periodicals, research studies, etc

2. Materials (including source)

3. Equipment (including source)

AN ANALYSIS OF THE INTERNATIONAL EDUCATIONAL MEDIA PROBLEM

by

Seth Spaulding

Although the theoretical framework remains to be developed, the following outline is suggestive of the kinds of data which will be collected in order to formulate the interrelationships necessary in developing the theoretical framework:

I. Existing facilities and services

A. Production services (all services involved in getting a finished product to the point of distribution, including writing, art work, editing, publishing, printing, etc.)

1. Types of production services

a. government production

i. types of materials

(a) educational

(1) primary, secondary, higher, technical, vocational
(2) adult
(3) school-university
(4) agriculture extension
(5) cooperatives
(6) other

(b) political
(c) propaganda
(d) religious (directly or indirectly by pressure groups)

ii. types of media

(a) books, pamphlets, work-books, programed texts, reports, etc.
(b) TV-Radio - types of programs
(c) films - documentary, educational, recreational

(d) newspapers
(e) magazines
(f) AV services, including posters, billboards, etc., demonstration materials and centers

b. Commercial (private profit making institutions) same as i, ii above

c. Religious bodies, missions, etc., same as i, ii above

2. Use of production facilities

a. Physical use

i. Are they used to physical capacity?
ii. Are their mechanical capabilities being exploited? (for color printing, variety of functions, etc.)

b. Use for which intended

i. Was decision of intended use based on an identified need?

ii. If so, is it being so used?

iii. How was the need determined?

iv. If not, should need be determined?

3. Sufficiency of facilities

a. Need

i. What are criteria, if any, for establishing present and anticipated needs?

4. Production materials (all physical materials required for production, including paper products, ink, film products, and necessary equipment.)

a. What is available on local market?
b. Are economic factors a problem?

i. Capital, etc. (How do these economic factors influence production materials?)
c. Are exchange and import duties a problem?
d. Is overall economic planning taking b and c into consideration?

5. Personnel

a. Have personnel needs been projected?

i. professional
ii. semi-professional
iii. technical

b. Has existing personnel been surveyed?
c. How nearly doesthe supply need this need?
d. Are training facilities available?

i. how many?
ii. what kind?
iii. how much personnel are they training?

e. What is being planned in light of a and b?

B. Distribution services

1. Types of service

a. government agencies

i. departments

(1) agriculture
(2) health
(3) propaganda ministry
(4) development office
(5) etc.

ii. other government supported agencies

(1) schools
(2) libraries
(3) mobile film and book units
(4) broadcasting
(5) AV services
(6) etc.

b. Commercial

i. booksellers (including text, recreationals, etc.)
ii. newsstands
iii. publishers
iv. wholesalers
v. broadcasters

c. Foundations

d. International exchange of materials

i. is there an organized effort?
ii. how does the Indian/Spanish/Portuguese/English problem affect this?

2. Use of distribution facilities

a. Physical use

i. are they used to capacity?
ii. are the capabilities being exploited? (including possibility of "piggy-backing" books on other products--groceries, beer, etc.)

b. Use for which intended

i. was decision of intended use based on an identified need?
ii. if so, is it being so used?
iii. how was need determined?
iv. if not, should need be determined?

3. Sufficiency of facilities

a. Need

i. what are criteria, if any, for establishing present and anticipated need?

4. Physical equipment and administrative organization and operation

5. Personnel

a. have personnel needs been projected?
b. has existing personnel been surveyed?
c. what is available?

i. how many?
ii. what kind? (librarians, radio announcers, teachers trained in the use of audiovisual materials, booksellers, etc.)

d. how nearly does it meet the need?

C. Control

1. Types

a. government

i. is there formal or informal control over use of media exerted by

(1) attitudes of officials
(2) governmental policies
(3) legislation

b. commercial

i. is there formal or informal control exerted by

(1) political interests
(2) economic interests

c. is there a national board of control?

i. if so, how does it operate?
ii. if not, would one be desirable? What should structure, powers, and policies be?

II. Copyright

A. What are copyright laws?

B. How do they affect reproduction of materials for educational purposes?

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PRESENT STATUS OF THE PROJECT'S INFORMATION STORAGE AND RETRIEVAL SYSTEM

To date, there are nearly 3,000 research reports, pamphlets, preprints, articles, and other documents stored in the Information System of the ITM Project. In addition there are over 500 books, 2,100 slides, 1400 photographs, numerous newspaper clippings, and a large file of trade literature. This makes a total of approximately 7,000 items, exclusive of the trade literature and newspaper clipping files.

The Project also subscribes to eighty-nine periodicals in the Instructional Technology and related fields. With few exceptions, these periodicals are stored in the system. Copies, dating back to 1960, are available for most of these.

At the present time, the Project's information system is growing at the rate of twenty to thirty items per day. This growth, though substantial, will be considerably increased during the next few months as a more aggressive effort will be made to obtain fugitive and other relevant materials, especially research and archival materials.

An index of terms, as described in Staff Paper Number Two, AN INFORMATION INDEXING, STORAGE, AND RETRIEVAL SYSTEM FOR DOCUMENTS IN THE FIELD OF INSTRUCTIONAL TECHNOLOGY, has been developed for the Project's information system. This index is presently undergoing a final revision. All documents and other materials are being classified and entered into the system according to these indexing categories.

With the desire to improve the efficiency of the Project's storage and retrieval system, a second proposal has been sent to the Council of Library Resources in Washington, D.C., requesting a grant for the purpose of obtaining the necessary equipment and supplies for establishing a Termatrex (peek-a-boo) IR System. As mentioned in the last report, this system offers a number of advantages over the Unisort edge-notched cards used by the Project in the past. Since the Termatrex is an "inverted" system, a card is provided for each term used to describe the information in a document, rather than a card for each document. In this way, the 7,000 items presently in our system can be stored on the 319 term cards.

In anticipation of the approval of this proposal to the Council of Library Resources, the Project staff has moved forward with adapting and updating the collection of materials to facilitate the rapid conversion to the Termatrex system. Uniterm cards listing pertinent documents have been prepared to permit retrieval by subject categories. A 3 x 5 card catalog is still being maintained for locating materials by author and title.

TRADE LITERATURE FILE

In October of last year, a letter was sent to approximately 500 suppliers of audiovisual vendors requesting the latest catalogues, brochures, photographs, specifications and information regarding products now on the market or in developmental stages for future use. Vendors were taken from the latest issue of the NAVA directory.

Approximately 95% of the suppliers responded with literature describing their latest products. To date, approximately two-thirds of the material has been entered into the system with anticipated completion by the second week of January.

Material has been entered into the categories as listed below (by number), and within each category, alphabetically by Vendor or Manufacturer. A yellow sheet was inserted in front of the existing material in each folder and all new material added since October, 1964 will be found in front of this yellow sheet. All photographs received, old or new, appear at the front of the folder, regardless of time of receipt. Our old photograph file has been refiled to accompany the trade literature.

5001 Conventional AV to 1955
5002 Film and related equipment
5003 Filmstrip
5004 Slide (2x2, etc.)
5005 Opaque
5006 Overhead
5007 Record players
5008 Tape recorders
5009 Radio
5010 Maps and globes
5011 Models & kits
5012 Transition period to 1965
5013 Language labs
5014 Television
5015 Teaching machines and programed instruction
5016 Random access equipment
5017 Performance aids
5018 Copy systems
5019 Videotape recorders, etc.
5020 Current and new
5021 8 mm
5022 Multiple screen projection
5023 Classroom communicators
5024 Instructional Systems
5025 Computers - general
5026 Computers - as teaching machines
5027 Computers - programming for
5028 Test scoring devices
5029 Simulators
5030 Facsimile
5031 Microfilm readers
5032 Technological developments beyond 1965
5033 Information systems
5034 Processing of information
5035 Storage and retrieval of information
5036 Transmission and display of information
5037 Computer advances
5038 Translating machines
5039 Educational data-processing
5040 Artificial intelligence
5041 Others - catch-all
5042 Reading devices (current & new)
5043 Individual viewers (conventional AV)
5044 Educational Environment (planning furniture)
5045 Lasers & masers (current & new)
5046 Rear View Projectors (current and new)
5047 Science - general
5048 Graphics materials & display
5049 Still cameras & related equipment
5050 Sound systems

SLIDE COLLECTION

At the present time we have approximately 2100 slides in our system. These are classified according to the categories in the Project's index of terms. They are stored on plastic trays (used in slide sorters) which are stacked horizontally on top of each other, thus taking up very little storage space. The subject matter of the slides is written on the exposed bottom edge of the tray. This makes retrieval - by subject or category - fairly easy; and when gathering slides for a media presentation or when just "browsing" these individual trays can be examined over the light of a slide sorter.

In order to facilitate and accelerate the process of examining and sorting slides, a giant slide sorter has been developed by a member of the Project staff. Called an "E-Lite," this device utilizes two discarded standard 48-inch long, two-fluorescent bulb ceiling fixtures upon which are placed the plastic slide sorting trays. These fluorescent fixtures have been placed in a bank at a slight angle using 3/4-inch plywood for the base. By using two adjacent pairs of these E-Lites, space has been provided for approximately 460 slides. Also, this allows adequate work space for four people.

These E-Lites are lightweight enough to be hung on a wall or set on a table. They are easily stored and can serve a variety of other purposes; one of these being the making of slides from overhead transparencies which are placed against the translucent plastic of the E-Lites and shot with a camera on a tripod.